

UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20590

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Glazer, Peter M.
Havre, Pamela A.

(ii) TITLE OF INVENTION: Chemically Modified Oligonucleotide for
Site-Directed Mutagenesis

(iii) NUMBER OF SEQUENCES: 13

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Patrea L. Pabst
(B) STREET: 1100 Peachtree Street, Suite 2800
(C) CITY: Atlanta
(D) STATE: Georgia
(E) COUNTRY: USA
(F) ZIP: 30309-4530

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 08/083,088
(B) FILING DATE: 25-JUN-1993
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Pabst, Patrea L.
(B) REGISTRATION NUMBER: 31,284
(C) REFERENCE/DOCKET NUMBER: YU109

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (404)-815-6508
(B) TELEFAX: (404)-815-6555

(i) MOLECULE TYPE: DNA (genomic)
(ii) HYPOTHETICAL: NO
(iv) ANTI-SENSE: NO
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:
AGGAAGGGGG

10

(2) INFORMATION FOR SEQ ID NO:3:
(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 10 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
(ii) MOLECULE TYPE: DNA (genomic)
(iii) HYPOTHETICAL: NO
(iv) ANTI-SENSE: NO
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:
GGGGGAAGGA

10

(2) INFORMATION FOR SEQ ID NO:4:
(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 8 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

40

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi)	SEQUENCE DESCRIPTION:	SEQ ID NO:4:
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
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11	11	11
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13	13	13
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94	94	94
95	95	95
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97	97	97
98	98	98
99	99	99
100	100	100

CCCCCTTC

88

(2) INFORMATION FOR SEQ ID NO:5:

(1) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) **HYPOTHETICAL: NO**

(iv) ANTI-SENSE: NO

(ix) **FEATURE:**

(A) NAME/KEY: misc_feature

(B) LOCATION: 1..11

(D) OTHER INFORMATION: /function= "N is

4',-hydroxymethyl-4,5',8-trimethylpsoralen"

(xi)	SEQUENCE	DESCRIPTION:	SEQ	ID NO:5:
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NGGGGAAGG A

11

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

TGGTGGTGGG GGAAGATTC GACCTCGA AGTCG

35

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

CGACTCGAA GGTGGAATC CTCCCCCAG CACCA

35

(2) INFORMATION FOR SEQ ID NO:10:

(1) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 121 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) **HYPOTHETICAL: NO**

(iv) ANTI-SENSE: NO

(ix) **FEATURE:**

- ```
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..60
(D) OTHER INFORMATION: /function= "At positions 16 and 57,
 N is G or T."
```

(ix) **FEATURE:**

- (A) NAME/KEY: misc feature  
(B) LOCATION: 1..121  
(D) OTHER INFORMATION: /function= "At position 17, N is A,  
G or T."

(ix) FEATURE:

- (A) NAME/KEY: ~~misc feature~~  
(B) LOCATION: 1, 121  
(D) OTHER INFORMATION: /function= "At position 18, N is A,  
C or T."

**(ix) FEATURE:**

- (A) NAME/KEY: misc feature  
(B) LOCATION: 1..121  
(D) OTHER INFORMATION: /function= "At position 20, N is G  
or A."

## (ix) FEATURE:

- (A) NAME/KEY: misc feature  
(B) LOCATION: 1..121  
(D) OTHER INFORMATION: /function= "At position 24, N is C  
or T."

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

TCGTGGTGGG GGAAGNNTN GANCTCGA AGTCGATGAC GGCAGATTTA GAGTCTNCTC 60  
CCTTGGCCG CTCGGGACC CCACCACAGG TAATGCTTTT ACGGGCGCA TCATATCAAA 120  
T 121

## (2) INFORMATION FOR SEQ ID NO:11:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 121 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: DNA (genomic)

## (iii) HYPOTHETICAL: NO

## (iv) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

ATTGATATG ATGCCCCCG TAAAGCATT ACCTGTGTG GGGTCCCGA GCGGCCAAAG 60  
GGAGCAGACT CTAATCTGC CGTCATCGAC TTCGAAGGT CGAATCCTTC CCCCACCACC 120  
A 121



(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 121 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(iii) **HYPOTHETICAL: NO**

(iv) ANTI-SENSE: NO

(ix) **FEATURE:**

- (A) NAME/KEY: misc\_feature  
(B) LOCATION: 1.121  
(D) OTHER INFORMATION: /function= "At position 7, N is G  
or T."

(ix) **FEATURE:**

- (A) NAME/KEY: misc\_feature  
(B) LOCATION: 1..121  
(D) OTHER INFORMATION: /function= "At positions 12, 20 and 117, N is C or G."

(ix) **FEATURE:**

- ```
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..121
(D) OTHER INFORMATION: /function= "At positions 15, 16,
    21, 29, 78, 83 and 108, N is A or G."
```

(ix) ~~FEATURE:~~

- (A) NAME/KEY: misc feature
(B) LOCATION: 1..121
(C) OTHER INFORMATION: /function= "At positions 18, 49,
(D) 68, 69, and 107, N is C or T."

(ix) **FEATURE:**

- ```
(A) NAME/KEY: misc feature
(B) LOCATION: 1..121
(D) OTHER INFORMATION: /function= "At position 114, N is
 C, T or A."
```

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| TGGTGGNGGG | GNAANNANTN | NAACCTTCNA | AGTCGATGAC | GGCAGATTNN | GAGTCTNCTC | 60  |
| CCTTTGGNNG | CTCGGANCC  | CCNCCACAGG | TAATGCTTTT | ACGGGNNCA  | TCANNNTNAA | 120 |
| T          |            |            |            |            |            | 121 |

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 121 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)

(iii) **HYPOTHETICAL: NO**

(iv) ANTI-SENSE: NO

(ix) **FEATURE:**

- (A) NAME/KEY: misc feature  
(B) LOCATION: 1..121  
(D) OTHER INFORMATION: /function= "At position 16, N is G  
or A."

**(ix) FEATURE:**

- ```
(A) NAME/KEY: misc feature
(B) LOCATION: 1..121
(D) OTHER INFORMATION: /function= "At position 17, N is A
or T."
```

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000 27000 28000 29000 30000 31000 32000 33000 34000 35000 36000 37000 38000 39000 40000 41000 42000 43000 44000 45000 46000 47000 48000 49000 50000 51000 52000 53000 54000 55000 56000 57000 58000 59000 60000 61000 62000 63000 64000 65000 66000 67000 68000 69000 70000 71000 72000 73000 74000 75000 76000 77000 78000 79000 80000 81000 82000 83000 84000 85000 86000 87000 88000 89000 90000 91000 92000 93000 94000 95000 96000 97000 98000 99000 100000

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..121
- (D) OTHER INFORMATION: /function= "At position 19, N is T or C."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

TGGTGGTGGG	GGAAGNNTNC	GAACCTTCGA	AGTCGATGAC	GGCAGATTTA	GAGTCTNCTC	60
CCTTTGGCCG	CTCGGAACC	CCACCACAGG	TAATGCTTTT	ACGGGCGGCA	TCATATCAAA	120
T						121